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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
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10/529,371

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Rifat Can

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EXAMINER

SAFAIPOUR, BOBBAK

ART UNIT

PAPER NUMBER

2618

MAIL DATE

DELIVERY MODE

12/14/2007

PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

The time period for reply, if any, is set in the attached communication.

Office Action Summary

Application No.

10/529,371

Applicant(s)

CAN ET AL.

Examiner

Bobbak Safaipoor

Art Unit

2618

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 14 April 2005.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 13-29 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 13-29 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 28 March 2005 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
- 1) ☒ Certified copies of the priority documents have been received.
 - 2) ☐ Certified copies of the priority documents have been received in Application No. _____.
 - 3) ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>6/20/2006, 8/7/2007</u> . | 6) <input type="checkbox"/> Other: _____ |

DETAILED ACTION

Claims 1-12 have been cancelled. **Claims 13-29** are now pending in the application.

Priority

Receipt is acknowledged of papers submitted under 35 U.S.C. 119(a)-(d), which papers have been placed of record in the file.

Information Disclosure Statement

The information disclosure statements submitted on 6/20/2006 and 8/7/2007 have been considered by the Examiner and made of record in the application file.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

The factual inquiries set forth in *Graham v. John Deere Co.*, 383 U.S. 1, 148 USPQ 459 (1966), that are applied for establishing a background for determining obviousness under 35 U.S.C. 103(a) are summarized as follows:

1. Determining the scope and contents of the prior art.
2. Ascertaining the differences between the prior art and the claims at issue.
3. Resolving the level of ordinary skill in the pertinent art.
4. Considering objective evidence present in the application indicating obviousness or nonobviousness.

This application currently names joint inventors. In considering patentability of the claims under 35 U.S.C. 103(a), the examiner presumes that the subject matter of the various claims was commonly owned at the time any inventions covered therein were made absent any

evidence to the contrary. Applicant is advised of the obligation under 37 CFR 1.56 to point out the inventor and invention dates of each claim that was not commonly owned at the time a later invention was made in order for the examiner to consider the applicability of 35 U.S.C. 103(c) and potential 35 U.S.C. 102(e), (f) or (g) prior art under 35 U.S.C. 103(a).

Claims 13-29 rejected under 35 U.S.C. 103(a) as being unpatentable over **Rohani (US 6,195,342)** in view of **Bonta (US 2002/0077103)**.

Consider **claim 13**, Rohani discloses a method for operating a mobile radio system with a first group of adjacent radio cells and a second group of adjacent radio cells, the first and second groups of radio cells being overlaid on each other, comprising:

measuring signal quality from a mobile station, which is operating at a current position in a first radio cell of the first group, to other radio cells of the first group that are adjacent to the first cell (col. 1, lines 38-46; col. 2, lines 37-50; determining candidate pilot signals according to location of mobile station); and

determining which of other radio cells of the first group has the best signal quality for the current position of the mobile station (figure 1; col. 2, line 50 to col. 3, line 4; col. 4, lines 9-44; predetermined priority candidate lists).

Rohani discloses a mobile station located in a cell area transmits a Pilot Strength Measurement Message which includes a Neighbor Set of a list of a hand-off candidate base stations, the list is substantially reduced to include only a few of the adjacent base stations (figure 4; col. 5, line 52 to col. 6, line 28). However, Rohani fails to specifically disclose

identifying a sub-group of radio cells from the second group based on which radio cell of the first group has the best signal quality; and measuring signal quality from the mobile station to the sub-group of radio cells from the second group but not to other radio cells of the second group that are not included in the subgroup.

In related art, Bonta discloses identifying a sub-group of radio cells from the second group based on which radio cell of the first group has the best signal quality (figure 2; paragraphs 23-26; A neighbor list is optimized for grid element 17 to include only neighbors VI and VII rather than being tied to serving cell I.); and

measuring signal quality from the mobile station to the sub-group of radio cells from the second group but not to other radio cells of the second group that are not included in the subgroup (figure 2; paragraphs 23-26; The small optimal neighbor lists assignments for each grid element 16-20 is determined by the mobile based on pilot measurements that exceed an add-threshold level.)

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Bonta into the teachings of Rohani to generate and assign an optimal neighbor list based on the actual location of the mobile station.

Consider **claim 29**, Rohani discloses a device to determine a sub-group of adjacent radio cells in a mobile radio system with a first group of adjacent radio cells and a second group of adjacent radio cells, the first and second groups of radio cells being overlaid on each other, comprising:

a first measurement unit to measure signal quality from a mobile station, which is operating at a current position in a first radio cell of the first group, to other radio cells of the first group that are adjacent to the first cell (col. 1, lines 38-46; col. 2, lines 37-50; determining candidate pilot signals according to location of mobile station);

a determination unit to determine which of other radio cells of the first group has the best signal quality for the current position of the mobile station (figure 1; col. 2, line 50 to col. 3, line 4; col. 4, lines 9-44; predetermined priority candidate lists);

Rohani discloses a mobile station located in a cell area transmits a Pilot Strength Measurement Message which includes a Neighbor Set of a list of a hand-off candidate base stations, the list is substantially reduced to include only a few of the adjacent base stations (figure 4; col. 5, line 52 to col. 6, line 28). However, Rohani fails to specifically disclose an identification unit to identify a sub-group of radio cells from the second group based on which radio cell of the first group has the best signal quality; and a second measurement unit to measure signal quality from the mobile station to the sub-group of radio cells from the second group but not to other radio cells of the second group that are not included in the subgroup.

In related art, Bonta discloses identification unit to identify a sub-group of radio cells from the second group based on which radio cell of the first group has the best signal quality (figure 2; paragraphs 23-26; A neighbor list is optimized for grid element 17 to include only neighbors VI and VII rather than being tied to serving cell I.); and

a second measurement unit to measure signal quality from the mobile station to the sub-group of radio cells from the second group but not to other radio cells of the second group that are not included in the subgroup (figure 2; paragraphs 23-26; The small optimal neighbor lists

assignments for each grid element 16-20 is determined by the mobile based on pilot measurements that exceed an add-threshold level.).

Therefore, it would have been obvious to one of ordinary skill in the art at the time of the invention to incorporate the teachings of Bonta into the teachings of Rohani to generate and assign an optimal neighbor list based on the actual location of the mobile station.

Consider **claim 14**, and as applied to claim 13 above, Rohani, as modified by Bonta, discloses the claimed invention wherein the radio cells of the second group are smaller than the radio cells of the first group. (Bonta: paragraph 26; optimal neighbor lists will be small)

Consider **claim 15**, and as applied to claim 13 above, Rohani, as modified by Bonta, discloses the claimed invention wherein the radio cells of the first group are operated in a different frequency range from radio cells of the second group. (Rohani: col. 1, lines 25-33)

Consider **claim 16**, and as applied to claim 13 above, Rohani, as modified by Bonta, discloses the claimed invention wherein if the current position of the mobile station changes, a new sub-group of radio cells from the second group is identified before measuring signal quality to radio cells of the second group. (Bonta: paragraphs 23-26)

Consider **claim 17**, and as applied to claim 13 above, Rohani, as modified by Bonta, discloses the claimed invention wherein the sub-group of radio cells from the second group is identified based on sub-group information describing which radio cells of the second group have

a close relationship with the radio cell of the first group which has the best signal quality (Bonta: figure 2; paragraphs 23-26), and

the base station of the first radio cell transmits the sub-group information to the mobile station. (Rohani: figure 1; col. 4, lines 9-44; col. 4, lines 45-67; Bonta: paragraphs 23-26)

Consider **claim 18**, and **as applied to claim 17 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein the sub-group information specifies different sub-groups of radio cells from the second group for different radio cells of the first group (Bonta: figure 2; paragraphs 23-26),

the mobile station determines its actual position within the first radio cell and determines which of the other radio cells of the first group has the best signal quality for the actual position (Rohani: col. 2, line 41 to col. 3, line 4; col. 4, lines 9-44), and

the mobile station identifies the sub-group from the determined position and the sub-group information. (Bonta: figure 2; paragraphs 23-26)

Consider **claim 19**, and **as applied to claim 17 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein when the mobile station moves and there is a change in the radio cell of the first group having the best signal quality, new sub-group information is generated and transmitted from the base station of the first radio cell to the mobile station. (Rohani: figures 3-4; col. 5, line 52 to col. 6, line 29; Bonta: figure 2; paragraphs 23-26)

Consider **claim 20**, and as **applied to claim 17 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein the base station of the first radio cell uses a directional antenna to transmit the sub-group information. (Rohani: figure 1; col. 4, lines 9-44)

Consider **claim 21**, and as **applied to claim 13 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein each radio cell is served by a base station (Rohani: figures 3-4; Bonta: figure 2), and

signal quality measurements are taken from the mobile station to the base stations serving the respective radio cells (Rohani: col. 4, lines 9-44; Bonta: paragraphs 23-26).

Consider **claim 22**, and as **applied to claim 21 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein for a least a portion of the radio cells, a single base station served two or more radio cells (Rohani: figures 3-4; Bonta: figure 2).

Consider **claim 23**, and as **applied to claim 14 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein the radio cells of the first group are operated in a different frequency range from radio cells of the second group. (Rohani: col. 1, lines 25-33)

Consider **claim 24**, and as **applied to claim 23 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein if the current position of the mobile station changes, a new sub-group of radio cells from the second group is identified before measuring signal quality

to radio cells of the second group. (Bonta: paragraphs 23-26)

Consider **claim 25**, and as **applied to claim 13 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein the sub-group of radio cells from the second group is identified based on sub-group information describing which radio cells of the second group have a close relationship with the radio cell of the first group which has the best signal quality (Bonta: figure 2; paragraphs 23-26), and

the base station of the first radio cell transmits the sub-group information to the mobile station. (Rohani: figure 1; col. 4, lines 9-44; col. 4, lines 45-67; Bonta: paragraphs 23-26)

Consider **claim 26**, and as **applied to claim 25 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein the sub-group information specifies different sub-groups of radio cells from the second group for different radio cells of the first group, (Bonta: figure 2; paragraphs 23-26),

the mobile station determines its actual position within the first radio cell and determines which of the other radio cells of the first group has the best signal quality for the actual position, (Rohani: col. 2, line 41 to col. 3, line 4; col. 4, lines 9-44) and

the mobile station identifies the sub-group from the determined position and the sub-group information. (Bonta: figure 2; paragraphs 23-26)

Consider **claim 27**, and as **applied to claim 25 above**, Rohani, as modified by Bonta,, discloses the claimed invention wherein when the mobile station moves and there is a change in

the radio cell of the first group having the best signal quality, new sub-group information is generated and transmitted from the base station of the first radio cell to the mobile station.

(Rohani: figures 3-4; col. 5, line 52 to col. 6, line 29; Bonta: figure 2; paragraphs 23-26)

Consider **claim 28**, and as **applied to claim 25 above**, Rohani, as modified by Bonta, discloses the claimed invention wherein the base station of the first radio cell uses a directional antenna to transmit the sub-group information. (Rohani: figure 1; col. 4, lines 9-44)

Conclusion

Any response to this Office Action should be **faxed to (571) 273-8300 or mailed to:**

Commissioner for Patents
P.O. Box 1450
Alexandria, VA 22313-1450

Hand-delivered responses should be brought to

Customer Service Window
Randolph Building
401 Dulany Street
Alexandria, VA 22314

Any inquiry concerning this communication or earlier communications from the Examiner should be directed to Bobbak Safaipour whose telephone number is (571) 270-1092. The Examiner can normally be reached on Monday-Friday from 9:00am to 5:00pm.

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If attempts to reach the Examiner by telephone are unsuccessful, the Examiner's supervisor, Lana Le can be reached on (571) 272-7891. The fax phone number for the organization where this application or proceeding is assigned is (571) 273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free) or 703-305-3028.

Any inquiry of a general nature or relating to the status of this application or proceeding should be directed to the receptionist/customer service whose telephone number is (571) 272-2600.


Bobbak Safaipoor
B.S./bs

December 9, 2007


MATTHEW ANDERSON
SUPERVISORY PATENT EXAMINER